The Last Interglacial from a continental area in Western Mediterranean. The Fuentillejo maar-lake record, Central Spain.

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Abstract

The Fuentillejo maar is located in the Central Spanish Volcanic Field of Campo de Calatrava. Fuentillejo maar-lake has been a closed system and contains over 142 m of lacustrine sediments (Martín-Serrano *et al.*, 2009). Geochemical (element analysis, molecular analysis of organic compounds), physical, palynological, stable isotope analysis, mineralogical and sedimentary facies analysis were performed to characterize the sedimentary record in the 57-59.3 m depth interval of core FUENT-1. These proxies reconstruct the paleoenvironmental and paleoclimatic processes which controlled vegetation patterns, lake water level and deposition of sedimentary facies occurred during the Last Interglacial period.

Last Interglacial begins and ends abruptly on Fuentillejo sequence. Lacustrine facies are made of finelly laminated black-brown dolomicrite mud. Vegetation is characterised by a high pollen taxa diversity and high content in the Mediterranean and mesic forest component and a reduced content on *Artemisia*, *Pinus* and *Juniperus* taxa. The scarce forest development can be interpreted from the pollen record of mesophilus and thermophilous vegetation of the FUENT-1 sequence, in which only 40-50% of total pollen come from arboreal associations. These values for arboreal pollen content are low compared with other European pollen sequences (e.g. Allen *et al.*, 1999; Tzedakis *et al.*, 2002). Stable isotopes of authigenic carbonates show the highest values (15‰) of $\delta^{18}O$ and high positive values of $\delta^{13}C$ corroborating that CO_2 was contributed by degradation of organic matter on a permanent anoxic lake bottom.

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